

Developing a Tiered Approach to Volunteer Monitoring

Timothy Craddock

WV Save Our Streams, WV Department of Environmental Protection (WV DEP) Division of Water and Waste Management, 414 Summers Street 2nd Floor, Charleston, WV 25301

Biographical Sketch of Author

Tim is an Environmental Resource Specialist and Program Coordinator for the WV Save Our Streams Program, a position he has held for the past 4 years. He has a bachelors of science in biology with a focus on marine science and a masters in environmental science. Tim has worked in the natural resources field both as a volunteer and under the employ of federal, state and private companies for more than 12 years. Tim has developed outreach and education materials and programs in water quality focusing on wetlands and polluted coalmine drainage; and has been involved in several wetland creation and restoration projects for school science programs and mine treatment projects. Tim has also lead project teams for disaster assistance and environmental assessment with the Federal Emergency Management Agency in the Virgin Islands after hurricane Marilyn and following floods in the Midwest and West Virginia.

Abstract

Like many volunteer monitoring programs across the country, a major goal of the WV Save Our Streams Program is to encourage the use of volunteer data for purposes other than as a compliment to professional data gathered for the 305(b) report. The idea is simply to gain credibility by providing a program that is not only accepted by the volunteers but also by federal and state agencies, and who's information could be a possible mechanism for future funding of volunteer managed monitoring projects. A series of stakeholder and roundtable style meeting were held over an 8 month period in order collect ideas from all interested participants and provide guidance for future program development. The direction was overwhelming from both volunteers and professionals; to develop a program that would provide enhanced training opportunities but would still be understood by those with little experience in stream assessment techniques.

To that end WV Save Our Streams developed a tiered approach to stream monitoring training:

- **Beginning Stream Monitoring:** Introduces the concepts of chemical, physical and biological stream monitoring and provides basic equipment, manuals and other resource materials.
- **Intermediate Stream Monitoring:** Expands upon the concepts by using more thorough techniques, thus beginning to quantify the information collected. Basic equipment, manuals and other resources are provided.
- **Advanced Stream Monitoring:** The training is very similar to a professional method of stream assessment, "rapid bioassessment protocols (RBPs)". Enhanced equipment, manuals and additional resources are provided.

In addition to the training, a volunteer stream condition index was developed and tested for each level of assessment. The advanced volunteer **stream index** has been compared to the state's IBI (known as the WV Stream Condition Index "WVSCI") on 500 benthic collections at random from the state's database. Comparisons were done by applying the volunteer field method of identification to the random samples. Statistical analysis gave a correlation of 0.92 when comparing index methods and 0.96 when comparing the final biological integrity rating (i.e. excellent, good, marginal, poor). In house and field studies will continue. Progress has been slow at times, but within the past year, many agencies such as DEP's Watershed Assessment and Mining and Reclamation Section, WV Division of Natural Resources, US Army Corps of Engineers, US Geological Survey and the WV Conservation Agency are considering using the advanced volunteer methods as a quick reliable field method and screening tool to expedite information about certain water quality indicators to the general public.